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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,438	12/02/2003	Osamu Kobayashi	GENSP015	6793
22434	7590	08/09/2005	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 70250 OAKLAND, CA 94612-0250			HEINRICHS, CHRISTOPHER P	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/726,438	KOBAYASHI, OSAMU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Christopher P. Heinrichs	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-5, 8-12 and 17-28 is/are rejected.  
 7) ☒ Claim(s) 6-7, and 13-16 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The terms "substantially reduced" and "very high main link efficiency" in claim 1 are relative terms which render the claim indefinite. The terms "substantially reduced" and "very high main link efficiency" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

4. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 4 recites the limitation "the native stream rate" in line 4 of the claim. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 5 recites the limitation "main channel" in line 4 of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-5, 8-11, 17, and 19-28 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,914,637 to Wolf et al.

9. With regard to claims 1, 17, 19, and 24, Wolf discloses a transmission efficient packet based display interface (fig 2) arranged to couple a multimedia source device (fig 2, left-hand largest rectangle) to a multimedia sink device (fig 2, right-hand largest rectangle), comprising a bi-directional auxiliary channel arranged to transfer information between the multimedia source device and the multimedia sink device and vice versa (col 6 lines 20-23), wherein the information transferred over the auxiliary channel includes a set of packet attributes (aux data is sent during data island, col 14 lines 8-9, and aux data island includes video packet display attributes HSYNC and VSYNC, col 19 lines 2-4); and a unidirectional main link arranged to carry a number multimedia data packets from the multimedia source device to the multimedia sink device (video data

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during active video periods, col 12 line 66 – col 13 line 2) each having a multimedia data packet header (col 79 lines 47-48 and lines 51-52), wherein each of the headers is substantially reduced in size over what would otherwise be necessary since the packet attributes are communicated via the auxiliary channel prior to the transmission of the main link packets over main link thereby minimizing the packet overhead and providing a very high main link efficiency. (The video display attributes are necessary for appropriate video display and, if they were not transmitted out of band in the auxiliary channel, it would otherwise be necessary to include these attributes in a fixed position of the video packet itself, such as in a header. These attributes added to the video packet would increase the amount of data in the video packet, thereby increasing the bandwidth consumed by the packet. Hence the transmission of the attributes in the auxiliary channel significantly reduces the bandwidth that would otherwise be necessary for transmitting the multimedia data packet.). The EEPROMs and Microcontrollers shown in fig 2 store the computer program product that control the execution of the method performed by the apparatus described above.

10. With regard to claims 2 and 20, Wolf discloses all aspects of the invention of claim 1 and further discloses that the packet based display interface further include a transmitter unit (fig 13 item 114) coupled to the source device arranged to receive a source packet data stream (packets, col 47 line 55, which pass through item 118 to item 114) in accordance with a native stream rate (MCLK of col 47 lines 39 and 53); and a receiver unit coupled to the sink device (fig 14 item 214); and wherein the main link has

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an associated link transmission rate that is independent of the native stream rate (col 31 lines 39-44 describe primary data being transmitted at a rate higher than the audio data, which is received at the above noted native rate, and "higher" or "lower" do not constitute a dependency). The EEPROMs and Microcontrollers shown in fig 2 store the computer program product that control the execution of the method performed by the apparatus described above.

11. With regard to claims 3, 21, and 26, Wolf discloses all aspects of the invention of claims 1, 19, and 24 and further discloses that associated ones of multimedia data packets form a particular stream (col 6 lines 9-13, fig 2 depicts 2 different streams, in particular DigVideo). The EEPROMs and Microcontrollers shown in fig 2 store the computer program product that control the execution of the method performed by the apparatus described above.

12. With regard to claims 4, 22, and 27, Wolf discloses all aspects of the invention of claims 3, 21, and 26, and further discloses that the multimedia data packet stream is one of a number of multimedia data packet streams (col 11 lines 47-58) each having an associated adjustable data stream link rate that is independent of the native stream rate (col 11 lines 58-67, states all streams of data can have same time base, or when there is a need some of the audio or other data can be based upon another time base, hence adjusting from the former configuration to the latter. The EEPROMs and

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Microcontrollers shown in fig 2 store the computer program product that control the execution of the method performed by the apparatus described above.

13. With regard to claims 5, 23, and 28, Wolf discloses all aspects of the invention of claims 1, 19, and 24 and further discloses that the bidirectional auxiliary channel is formed of a uni-directional back channel configured to carry information from the sink device to the source device (col 12 lines 46-53 describe an industry standard method of a sink device communicating configuration information one way to a source device) and a uni directional forward channel included (auxiliary channel as set forth in the rejection of claim 1) as part of the main channel (fig 2 CH0, CH1, CH2, and CH3 comprise the main channel) for carrying information from the source device to the sink device in concert with the back channel (fig 2 shows the DDC and main channel coexisting in concert). The EEPROMs and Microcontrollers shown in fig 2 store the computer program product that control the execution of the method performed by the apparatus described above.

14. With regard to claim 8, Wolf discloses all aspects of the invention of claim 1 and further discloses the inclusion of a hot plug event detector (col 2 lines 36-39).

15. With regard to claim 9, Wolf discloses all aspects of the invention of claim 1 and further discloses that the information includes display timing information used by the sink device to provide a displayed image based upon the received data stream (col 14

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lines 9-10 describe a video preamble, which denotes the timing of the beginning of an active video period, which is used by the sink device to understand that an active video period is beginning, so that the sink device understands that the next data is video data used to display images).

16. With regard to claim 10, Wolf discloses all aspects of the invention of claim 1 and further discloses that the information includes sync loss (glitches, col 77 lines 47-50) information, dropped packets information (if packets are received then the receiver has evidence information that they have not been dropped), and the results of training session information (the reference of the rejection of claim 14 regarding the back channel includes configuration information relevant to the transmitter training the transmitter to be able to understand what type of display with which it will communicate, and the results of that session are the successful display of video or graphics or playback of audio).

17. With regard to claim 11, Wolf discloses all aspects of the invention of claim 1 and further discloses that the multimedia data packet transfer is an isochronous type transfer that includes a video data stream and a multichannel audio stream (see col 11 lines 47-58 reference, paying particular attention to use of same time base) and wherein the information transfer is an asynchronous transfer (col 14 lines 34-39, asynchronous arrangement of active video periods and data islands).



***Claim Rejections - 35 USC § 103***

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,914,637 to Wolf et al.

21. With regard to claim 12, Wolf discloses all aspects of the invention of claim 1 but fails to explicitly disclose that the main link rate is adjustable in the range of approximately 1.0 Gigabits per second to approximately 2.5 Gbps. However, it would have been obvious to one ordinarily skilled in the art at the time of the invention to include this functionality to arrive at the invention of claim 12. The motivation to do so would have been to accommodate different cable lengths and materials so as to avoid

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signal dispersion and attenuation of longer cables or poorer (less expensive) conductors.

22. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,914,637 to Wolf et al. in view of US-PGPUB 2003/0212811 submitted by Thornton.

23. With regard to claim 18, Wolf discloses all aspects of the invention of claim 1 but fails to *explicitly* disclose the selective refresh unit and associated functionality of claim 18. However Thornton discloses a selective refresh unit (fig 3 item 306A) that performs the selective refresh of claim 18, wherein the coordinates are the mouse positions (paragraphs 127-129). It would have been obvious to one ordinarily skilled in the art at the time of the invention to include this device and functionality into the device of claim 1 to arrive at the invention of claim 18. The motivation to do so would have been to utilize the selective updating method to limit the bandwidth used between the selective refresh unit and the display (paragraph 122 says that frames are updated independent of how they are written to the frame grabber, and not rewriting data that does not need to be rewritten because it hasn't changed can conserve valuable bandwidth).

***Allowable Subject Matter***

24. Claims 6-7 and 13-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Martwick et al (USPGPUB 2004/010333), Apparatus and Method for Low Latency Power Management on a Serial Data Link
- b. Abbas et al (USPGPUB 2002/0075902), Optimum Overhead Framing Techniques for ADSL DMT Modems
- c. Stirling et al (US 6,865,188), Local Communication System
- d. Higgins et al (US 6,587,480), Multimedia Client for Multimedia/Hybrid Network
- e. Tooker et al (US 6,353,594), Semi-Permanent Virtual Paths for Carrying Virtual Channels
- f. Genty et al (US 6,614,800), Method and System for Virtual Private Network Administration Channels

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- g. Balachandran (US 6,608,828), Methods and Systems for Decoding Headers that are Repeatedly Transmitted and Received Along with Data on a Radio Channel
- h. Reeves et al (USPGPUB 2002/0071390), System and Method for Establishing a Communication Path Associated with and MPLS Implementation on an ATM Platform
- i. Pasqualino et al (USPGPUB 2003/0149987), Synchronization of Data Links in a Multiple Link Receiver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Heinrichs whose telephone number is 571-272-8397. The examiner can normally be reached on Monday through Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER

8/5/05